REMARKS

The office action of October 16, 2008, has been reviewed and its contents carefully noted. Reconsideration of this case, as amended, is requested. Claims 1-4, 12-38 and 47 remain in this case.

Preliminary Comments

a. Claim 1 was amended to address the problem raised in the section 101 rejection.

b. Claims 37 and 38 were amended to correct a typographical error (repetition of the word "the").

c. The numbered paragraphs below correspond to the numbered paragraphs in the Office Action.

Claim Rejection Under 35 USC §101

21. Claim 1 (and claims 2-4, 12-14 dependent thereon) was rejected on the grounds that the claims were directed to non-statutory subject matter.

In making the rejection, the Examiner stated that the computer-readable data repository of claim 1 is a data structure per se, and therefore does not fall within one of the four statutory classes. Applicants respectfully disagree.

The repository of claim 1 is not a "data structure, per se" but rather a physical repository in which material property data is recorded. The claim has been amended in an attempt to make this clearer:

1. A <u>computer-readable data repository in which is recorded material property data</u>, said data comprising ...

Claim 1 previously recited an "encoded computer-readable medium", which is clearly statutory, as indicated in the MPEP 2106 section quoted by the Examiner. This wording was changed at the Examiner's requirement in the January 23, 2008 Office Action, because the Examiner stated that the Specification fails to provide support for the term "encoded computer-readable medium", but the nature of the claimed invention did not change. The "computer-

readable repository" is an "encoded computer-readable medium", using a word with support in the specification.

This was made clear in the response to the Office Action, wherein Applicants' Attorney stated,

> "…the repository (26) is shown in figure 26 by the flowchart symbol for computer disk storage. The entire application recites how computer software and encoding methods (i.e. XML) are used with the World Wide Web (i.e. computer network) to access (i.e. read) the data stored in the repository, which must therefore by definition be computer-readable."

"The field of the invention states,

> "The present invention relates generally to databases and *the electronic storage* and retrieval of information related to materials and their properties.

"The summary of the invention states,

> "The system of the invention provides a method, *preferably implemented in computer software*, for the delivery, *storage*, maintenance and controlled access to data on materials, *stored* in a centrally administered *data repository*."

Applicant believes that the "computer readable repository" of claim 1 as amended therefore claims the statutory subject matter of material recorded on a computer-readable medium. Reconsideration and withdrawal of the rejection is respectfully requested.

Rejection(s) under 35 U.S.C. §103

26. Claims 1-4 and 12-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Rappold, III (US PGPub 2004/0117397) in view of Gouge et al (US PGPub 2007/0288918), in view of Arritt et al. (US PGPub 2005/0131861) and further in view of the dissertation titled "Pulsed DC Reactive Magnetron Sputtering of Aluminum Nitride Thin Films" by Jung Won Cho.

27. Claims 15-19, 21-26, 28-30, 34-38, and 47 were rejected under 35 U.S.C. 103(a) as being unpatentable over the above references in further view of Boyd et al.(US PGP 2003/0069795).

28. Claim 20 was rejected under 35 U.S.C. 103(a) as being unpatentable over the all of the above in further view of Markki et al. (US PGPub 2004/0243580).

29. Lastly, claims 27, and 31-33 were rejected under 35 U.S.C. 103(a) as being unpatentable over the references cited above in the rejection of claim 15 in further view of O'Hare et al. (US 6,484,173).

These rejections are essentially the same as presented in the last Office Action, with the exception that Gouge et al (US PGPub 2007/0288918) is now added to the previously cited Arritt, Cho, Boyd, Markki and O'Hare references.

Claim 1(a) (and corresponding claim 15(a)(iv)(a)) recites:

a) a metadata database in the form of instances with associated metadata giving information about the instances, the metadata comprising at least one data element selected from a list comprising name, description, and identifying information, the metadata database comprising:

    i) metadata on the material;

    ii) metadata on the sample;

    iii) metadata on the test;

    iv) metadata on data value elements in a test result database further comprising at least one data element selected from a list comprising data type, units, acceptable values or ranges, and default value; and

    v) metadata on the metadata, comprising at least one data element describing the metadata on the material, sample, test and data value elements in the metadata database;

Applicants gratefully acknowledge the Examiner's admission in the October 16th Office Action that the Rappold does not show "metadata on metadata". This is correct. As expressed in the prior Office Action responses and the interviews with the Examiner on October 26, 2006, November 6, 2006 and October 22, 2007, Arritt, Cho, Boyd, Markki and O'Hare also lack the novel "metadata on metadata" of the claimed invention.

What all of the other references lack, Gouge, et al., does not supply.

Gouge, et al, is a method of importing a configured data set into a target data set. As with all the other cited references, Gouge does not have two databases, one with data and another with metadata about the data *and also metadata on the metadata.* Instead, Gouge, has a dataset 26, some of whose elements 34 are configurable and some of whose elements 46 are not configurable. The system merges 52 copies of the non-configurable elements 62 with copies of the configurable data elements 60 transformed 50 using metadata from a transformation instructions database 28 into a target dataset 40. There is a separate database 30 of data descriptions (metadata) which are used by a user interface 44 to determine which data elements can be configured.

To analyze Gouge, et al. more specifically, they are trying to configure software installations, not implement a repository for material properties. The software requires that some components (called data elements) need to be configurable – this is data. The values and possible options for each of these components is stored as metadata.

If you read paragraph [0032] of Gouge et al, there is a reference to a metadata table containing rows that contain name, format, type, context data, default value, description, attributes. That is a pure and simple metadata table. Each row of this table represents a configurable data element. This is identical to Rappold's metadata table, where each row in the metadata table contains name, format, type, context data, default value, description, attributes that describe the data. Nowhere does it say that the items in any given row in the metadata item description table are themselves described by metadata. So, there is no metadata on metadata.

Thus, neither Rappold, nor Gouge, nor Arritt, nor Cho, nor Makki, nor O'Hare teach, show or suggest the Applicants' metadata on metadata feature as used in a data repository for

material property data. Therefore, the combination of the references cannot supply which every one of them lacks.

Applicants' invention as described in the claims is a specific and novel data repository and method for storing and organizing materials property data using a specifically described organization of data, metadata and metadata on metadata. None of the references cited over the lengthy prosecution of this application have shown this novel repository or method. Applicants respectfully suggest that in adding Gouge, et al, to the three, or four, or five other references in making these obviousness rejections, Examiner is using the prior art as a "grab bag", pulling various features from each of a number of other references and, using hindsight based on Applicants' own invention, attempting to combine them into Applicants' novel data repository for materials properties data using metadata on metadata. Applicants further suggest that this four-, five- or six-way obviousness rejection fails once again to carry the burden of proving the present claims are obvious – because the claims are *not* obvious, and *do* represent a patentable novel, useful and non-obvious advance over the prior art in the field of materials property data systems. Reconsideration and withdrawal of the obviousness rejection of claims 1-4, 11-38, 41-42, and 47 are therefore respectfully requested.

Conclusion

Applicant believes the claims, as amended, are patentable over the prior art, and that this case is now in condition for allowance of all claims therein. Such action is thus respectfully requested. If the Examiner disagrees, or believes for any other reason that direct contact with Applicants' attorney would advance the prosecution of the case to finality, she is invited to telephone the undersigned at the number given below.

Respectfully Submitted:
Hubert Lobo and Kurien Jacob

By: /mfb #29619/_
    Michael F. Brown, Reg. No. 29,619
    Attorney for Applicant
    BROWN & MICHAELS, P.C., ● 118 N. Tioga St. – suite 400 ● Ithaca, NY 14850
    (607) 256-2000 ● (607) 256-3628 (fax) ● e-mail: docket@bpmlegal.com
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